

CLAIMS

1. A solenoid valve having an electromagnetic coil and a fixed iron core, and further including a valve disk consisting of a moving iron core, which freely moves toward or away from a valve port provided in a channel located between an input port and an output port, wherein

the valve port consists of a plurality of through holes annularly disposed in a diaphragm blocking the halfway portion of the channel;

either one or both of the input port and the output port are disposed such that either one or both of the axes of the input port and the output port are intersected by the valve stem of the valve disk; and

either one or both of the input port and the output port are disposed laterally to the valve port.

2. A solenoid valve having an electromagnetic coil and a fixed iron core, and further including a valve disk consisting of a moving iron core, which freely moves toward or away from a valve port provided in a channel located between an input port and an output port, wherein

a guide boss is provided in a diaphragm blocking the halfway portion of the channel;

the valve disk is formed in the shape of a cylinder, and the inner face of the cylinder-shaped valve disk is engaged slidably around the guide boss; and

the valve port is provided in the portion of the diaphragm,

located around the periphery of the guide boss.

3. A solenoid valve having an electromagnetic coil and a fixed iron core, and further including a valve disk consisting of a moving iron core, which freely moves toward or away from a valve port provided in a channel located between an input port and an output port, wherein

the valve port consists of a plurality of through holes annularly disposed in a diaphragm blocking the halfway portion of the channel;

the channel is provided in one housing divided body of a housing that can be divided into two bodies, and is equipped with the valve port; and

the other housing divided body is equipped with the electromagnetic coil, the fixed iron core, and the valve disk consisting of the moving iron core.

4. The solenoid valve according to Claim 1, wherein a rib serving as a valve seat is formed on the fringe of the valve port.

5. The solenoid valve according to Claim 1, wherein an inner-and-outer double-structured annular rib serving as a valve seat is provided in the diaphragm and the valve port is provided between the inner and outer ribs constituting the inner-and-outer double-structured annular rib.

6. The solenoid valve according to Claim 2, wherein

the top wall of the cylinder-shaped valve disk is bored to form an vent hole;

an auxiliary channel is formed between the inner-peripheral face of the cylinder-shaped valve disk and the outer-peripheral face of the guide boss; and

whereby, part of the fluid, which flowed from the output port, does not flow into the valve port when the valve is opened, but flows down along the periphery of the cylinder-shaped valve disk, and flows through the auxiliary channel from the vent hole; after that the part of fluid being flowed into the valve port.

7. The solenoid valve according to Claim 6, wherein an elastic stopper that is abutted on a bobbin member for holding the electromagnetic coil is provided in the seating portion of the valve disk, and a fluid-flowing gap extending from the output port to the periphery of the valve disk is provided between the seating portion of the valve disk and the bobbin member.

8. The solenoid valve according to Claim 7, wherein the elastic stopper is formed in the shape of a hemisphere.

9. The solenoid valve according to Claim 3, wherein the material of which the one housing divided body where the channel is provided is formed is the same as the material of a bobbin member for holding the electromagnetic coil, fixed in the other housing divided body; and

the one housing divided body and the bobbin member for holding the electromagnetic coil are welded to each other, thereby bonding the one housing divided body to the other housing divided body.

10. The solenoid valve according to Claim 1, wherein the output port is connected to a canister adsorbing volatilized gas from a fuel tank, and the input port is connected to an inlet pipe supplying fuel-air mixture into an engine, respectively.